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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,299	09/10/2004	Masashi Yasumatsu	KOMI:032	4909
6160	7590	03/16/2006	EXAMINER	
PARKHURST & WENDEL, L.L.P. 1421 PRINCE STREET SUITE 210 ALEXANDRIA, VA 22314-2805			DOTE, JANIS L	
			ART UNIT	PAPER NUMBER
			1756	

DATE MAILED: 03/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/507,299

Applicant(s)

YASUMATSU ET AL.

Examiner

Janis L. Dote

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/10/04; 12/7/04
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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1. The disclosure is objected to because of the following informalities:

The specification states that the non-coordinating monoazo compound is present as a contaminate in the monoazo-metals compound in the amount preferably "1% at most. It is more preferably less than 0.5% and further more preferably less than 0.1%." However, the specification fails to identify the basis of the percentages, e.g., weight, mole, etc.

Appropriate correction is required.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 2, 7, and 9 are indefinite in the phrase "R¹-, R²-, R³-, and R⁴- are . . . one thereof is selected from the groups consisting of a hydrogen atom . . . " (emphasis added) because it is not clear whether the claims require that all four R

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groups are represented by a member of the Markush group, or just one of the R groups is represented by a member of the Markush group. The phrase is further indefinite for improper Markush language. Proper Markush language is "R is selected from the group consisting of . . . and . . ." (emphasis added). It is not clear what is meant by the term "groups." It is not clear whether the Markush group (or groups) is (are) closed.

Claim 1 is further indefinite in the phrases "an aryl group being to have substitutional groups," "an aryl group being to have a few substitutional groups," and "an aralkyl group being to have substitutional groups" (emphasis added) because it is not clear whether the claim requires that the aryl groups and the aralkyl group be aryl groups and aralkyl group, respectively, that have substitutional groups, or whether the substitutional groups are optional.

Claim 1 is also indefinite in the phrase "a sulfonamide group which is to substitute alkyl groups" because it is not clear whether the claim requires a sulfonamide group that can be substituted with an alkyl group, e.g., $-S(O)_2NH\text{-alkyl}$ or an alkyl group substituted with a sulfonamide group, e.g., $-(CH_2)_2-S(O)_2NH_2$.

Claims 2, 7, and 9 are further indefinite in the phrases "an aryl group being to have substitutional groups" and "an

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aralkyl group being to have substitutional groups" (emphasis added) because it is not clear whether the claims require that the aryl group and the aralkyl group be an aryl group and an aralkyl group, respectively, that have substitutional groups, or whether the substitutional groups are optional.

Claims 2, 7, and 9 are also indefinite in the phrase "a sulfonamide group being to substitute alkyl groups" because it is not clear whether the claim requires a sulfonamide group that is substituted with an alkyl group, e.g., $-S(O)_2NH\text{-alkyl}$ or an alkyl group substituted with a sulfonamide group, e.g., $-(CH_2)_2-S(O)_2NH_2$.

Claim 2 is further indefinite in the phrase " R^5 is . . . aryl group being to have substitutional groups" because it is outside the scope of claim 1, from which claim 2 depends. Claim 1 recites that the R^5 group "is . . . aryl group being to have a few substitutional groups." The phrase "to have substitutional groups" in claim 2 is broader than the phrase "to have a few substitutional groups" in claim 1 because it includes aryl groups that have more than a "few substitutional groups."

Claims 2 and 9 are also indefinite in the phrase " $(M)_q$ where M is metals selected from a bivalent, trivalent, or tetravalent metallic element, and a metalloid of boron or silicon" (emphasis added) because it is not clear how M can be both a metal and a

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metalloid.

Claim 5 is indefinite in the phrase "said monoazo compound which is contaminated in said monoazo metals-compound, is 1% at most" (emphasis added) because it is not clear what is the basis of said percentage, e.g., weight, mole, etc. It is also not clear whether the claim requires that the monoazo compound present in the monoazo metals-compound is contaminated or that the monoazo compound that is not coordinate with the monoazo-metals compound is a contaminant to the monoazo-metals compound.

Claims 8 and 10 are indefinite in the phrase "resin is at least one selected from styrene-acyl resin, styrene-maleic acid resin, styrene-(meth)acrylate copolymer and a polyester resin, having an acid value of 5 to 50 mgKOH/g thereof" (emphasis added) for improper Markush language. Proper Markush language is "R is selected from the group consisting of . . . and . . ." or "R is . . . or . . ." MPEP 2173.05(h). Applicants are using a combination of both phrases. Thus, it is not clear what is the scope of the instant claims. The phrase is further indefinite because it is not clear whether the claims require that all of four of the named resins have the particular acid value or only the polyester resin.

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4. In the interest of compact prosecution, the examiner has interpreted the claim language in claims 1, 2, 7, and 9 as reciting that the groups R^1 to R^4 can be a sulfonamide group that can be substituted with an alkyl group.

The examiner has also interpreted the claim language in claim 5 as reciting that the monoazo compound that is not coordinate with the monoazo-metals compound is a contaminant to the monoazo-metals compound and is present in the amount recited in instant claim 5. The examiner has interpreted the amount of "at most 1%" to be met by any amount that has a numerical value in the range of "at most 1%."

The examiner has further interpreted the claim language in claims 8 and 10 as requiring that all of four of the named resins have the particular acid value recited in instant claims 8 and 10.

Rejections based on these interpretations are set forth infra.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this

Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f), or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,204,453 (Chambon).

Chambon discloses a monoazo-metal compound that meets the compositional limitations of formulas (I) and (II) recited in instant claim 1 and claims 2-4, respectively. The Chambon monoazo-metal compound is a symmetrical 1:2 metal complex azo dye (metal:two identical azo ligands = 1:2) of the formula (1)

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disclosed at col. 7, lines 10-26, of Chambon. Chambon teaches that the monoazo-metal compound can be represented by the 1:2 chromium complex of monoazo compound (24) disclosed at col. 12, lines 15-20. Monoazo compound (24) comprises a phenyl group substituted with a nitro group and a naphthyl group substituted with the group -NHCO-OCH_3 , which is within the compositional limitations of the group -NHCO-O-R^6 when R^6 is an alkyl group having 1 to 18 carbon atoms as recited in instant claims 1 and 2. Chambon further discloses that the metal in the monoazo complex can equally be chromium, cobalt, or iron. Col. 7, line 24.

9. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,427,585 (Beffa'585).

Beffa'585 discloses a monoazo-metal compound that meets the compositional limitations of formulas (I) and (II) recited in instant claim 1 and claims 2-4, respectively. The Beffa'585 monoazo-metal compound is a symmetrical metal complex azo dye of the formula (II) disclosed at col. 1, lines 45-65, of Beffa'585. In formula (II), the group Me is defined as being either chromium or cobalt. Col. 1, line 36, and col. 2, line 23. The Beffa'585 metal complex azo dye formula (II) comprises a monoazo moiety that comprises a phenyl group substituted with a

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sulfonamide group and a naphthyl group substituted with the group -NHCO-OCH_3 , which is within the compositional limitations of the group -NHCO-O-R^6 when R^6 is an alkyl group having 1 to 18 carbon atoms as recited in instant claims 1 and 2.

10. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,314,815 (Mollet).

Mollet discloses a monoazo-metal compound that meets the compositional limitations of formulas (I) and (II) recited in instant claim 1 and claims 2-4, respectively. See example 4 at col. 6. The Mollet monoazo-metal compound is a symmetrical 1:2 chromium complex azo dyestuff (metal:two identical azo ligands = 1:2). The dyestuff comprises a monoazo moiety that comprises a phenyl group substituted with a mesyl group and a naphthyl group substituted with the group -NHCO-OCH_3 , which is within the compositional limitations of the group -NHCO-O-R^6 when R^6 is an alkyl group having 1 to 18 carbon atoms as recited in instant claims 1 and 2.

Mollet does not disclose that the dyestuff has an average particle size of 0.1 to 7 microns as recited in instant claim 6. However, Mollet teaches that the dyestuff is ground together with a lignin sulphonate such that the dispersed dyestuff has a maximum particle size of 5 μm . See example 4. According to

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Mollet the grinding of the dyestuff is "continued until the major proportion (i.e., at least ca. 90% of the amount of dyestuff used) has a maximum particle size of . . . 5 μ ."

Col. 3, lines 4-13. Thus, because at least 90% of the dyestuff in example 4 is grounded and because the maximum particle size of the dispersed dyestuff is 5 microns, it is reasonable to presume that the Mollet azo dyestuff has an average particle size that is within the range of 0.1 to 7 microns as recited in instant claim 6. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

11. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by the dye C.I. Acid Black 58, as evidenced by the American Chemical Society (ACS) File Registry Number (RN) 12218-94-9 on STN, which was entered in STN on Nov. 16, 1984.

C.I. Acid Black 58 is a well-known 1:2 chromium monoazo complex salt dye (metal:two identical azo ligands = 1:2). See the ACS RN 12218-94-9. C.I. Acid Black 58 meets the compositional limitations of formulas (I) and (II) recited in instant claim 1 and claims 2-4, respectively. C.I. Acid Black 58 comprises a monoazo moiety that comprises a phenyl group substituted with a mesyl group and a naphthyl group substituted with the group $\text{-NHCO-OCH}_2\text{CH}_3$, which is within the

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compositional limitations of the group -NHCO-O-R^6 when R^6 is an alkyl group having 1 to 18 carbon atoms as recited in instant claims 1 and 2.

12. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,005,065 (Beffa'065).

Beffa'065 discloses a monoazo-metal compound that meets the compositional limitations of formula (I) recited in instant claim 1. See example 2 at col. 6. The Beffa'065 monoazo-metal compound is an asymmetrical chromium complex azo dyestuff. The dyestuff comprises a monoazo moiety that comprises a phenyl group substituted with a mesyl group and a naphthyl group substituted with the group -NHCO-OCH_3 , which is within the compositional limitations of the group -NHCO-O-R^6 when R^6 is an alkyl group having 1 to 18 carbon atoms as recited in instant claim 1.

Beffa'065 does not explicitly disclose that its monoazo-metal compound comprises non-coordinated monoazo compounds in an amount of "1% at most" as recited in instant claim 5. However, according to Beffa'065, the chromium complex in example 2 is obtained by: (1) mixing sodium carbonate and the monoazo dye that is obtained from diazotized 2-amino-1-hydroxyl-benzene-4-methylsulphone and 1-carboxymethoxyamino-7-hydroxynaphthalene;

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(2) adding to the mixture in step (1) the complex 1:1 chromium compound of chromium and the monoazo dye that is obtained from diazotized "4-nitro-2-amino-1-hydroxynaphthalene-6-sulphonic acid" and 2-hydroxynaphthalene; (3) heating the mixture to 80-85°C and keeping the mixture at this temperature "until the starting materials have disappeared" (emphasis added); (4) adding sodium chloride to precipitate the resultant dye; (5) isolating the precipitated dye by the "usual method"; and (6) drying the isolated dye. (Note that the recitation of "4-nitro-2-amino-1-hydroxynnaphthalene-6-sulphonic acid" appears to be an error. In view of the chemical structure shown in example 2, the compound appears to be "4-nitro-2-amino-1-hydroxylbenzene-6-sulphonic acid."). Because Beffa'065 removes the reaction starting materials, which include the monoazo dye of step (1) and the 1:1 chromium complex of step (2), it is reasonable to presume that the Beffa'065 monoazo-chromium containing compound comprises no non-coordinated monoazo dye of step (1) or said non-coordinated monoazo dye of step (1) in an amount that meets the amount recited in instant claim 5. The burden is on applicants to prove otherwise. Fitzgerald, supra.

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13. Claims 6, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,077,168 (Ogami) combined with US 3,923,453 (Lazar) and the ACS File Registry Number (RN) 12218-94-9 on STN, which was entered in STN on Nov. 16, 1984.

Ogami discloses a toner comprising a colorant, a particular binder resin, and a charge controlling agent dispersed therein at a concentration of at least 0.3 % by weight and the charge controlling agent has a particle distribution such that "the area ratio of particles having a particle size larger than 2.5 μm is at least 80% based on the section of the toner."

Col. 2, lines 10-22, and col. 4, lines 6-9. According to Ogami, said toner has a wide fixing temperature range and a high fixing ratio without being influenced by the environment or the kind of copying machine. Col. 2, lines 3-9. Ogami teaches that in order to produce such a charge controlling particle distribution, it is preferred that the charge controlling agent having a median diameter based on volume of at least 5 μm be used and be incorporated and dispersed in the particular binder resin. Col. 3, lines 31-39; and col. 4, lines 7-13. The median diameter of 5 μm is within the average particle size range of 0.1 to 7 μm recited in instant claim 6. Ogami teaches that the charge controlling agent is preferably a metal-containing complex dye, especially a 2:1 type metal-containing

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complex salt dye (dye molecule/metal = 2/1). Ogami teaches that the dye can be represented by the formula disclosed at col. 4, lines 20-40, where the metal is preferably chromium. Ogami teaches that the metal complex salt dye can be synthesized by known means and is then pulverized and classified to obtain the desired particle diameter. Col. 4, lines 41-44.

Ogami does not exemplify a charge controlling agent comprising the metal-containing complex compound as recited in the instant claims. However, as discussed above, Ogami teaches that the charge controlling agent is preferably a 2:1 type chromium-containing complex salt dye.

C.I. Acid Black 58 is a well-known 2:1 chromium monoazo complex salt dye. See the ACS RN 12218-94-9. C.I. Acid Black 58 is a commercially available product. C.I. Acid Black 58 is also known under the tradename Irgalan Grey BL manufactured by Ciba Geigy Corp. See the ACS RN 12218-94-9 and Lazar at col. 3, lines 14-17. C.I. Acid Black 58 meets the preferred charge controlling agent disclosed by Ogami. C.I. Acid Black 58 also meets the compositional limitations of formulas (I) and (II) recited in instant claim 7 and 9, respectively. C.I. Acid Black 58 comprises a monoazo moiety that comprises a phenyl group substituted with a mesyl group and a naphthyl group substituted with the group $\text{-NHCO-OCH}_2\text{CH}_3$, which

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is within the compositional limitations of the group -NHCO-O-R^6 when R^6 is an alkyl group having 1 to 18 carbon atoms as recited in instant claims 7 and 9.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Ogami and Lazar, to adjust, through routine experimentation, the commercially available dye C.I. Acid Black 58 as taught by Ogami, such that the resultant 2:1 chromium monoazo complex salt dye has a volume median particle diameter of 5 μm . It would have also been obvious for that person to use the resultant 2:1 chromium monoazo complex salt dye as the Ogami preferred charge controlling agent in the toner disclosed by Ogami. That person would have had a reasonable expectation of successfully obtaining a toner having the properties taught by Ogami.

14. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,500,318 (Tanikawa) combined with Lazar and the American Chemical Society (ACS) File Registry Number (RN) 12218-94-9 on STN, which was entered in STN on Nov. 16, 1984.

Tanikawa discloses a toner comprising a colorant, a particular binder resin, and a charge controlling agent. Tanikawa teaches that the binder resin can be a styrene-acrylate

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copolymer having an acid value of 7.1 mg KOH/g, which is within the acid range of 5 to 50 mg KOH/g recited in instant claims 8 and 10. See resin B at col. 18, line 61, to col. 19, line 7, and in Table 1 at col. 19; and example 2 at col. 21. Tanikawa further teaches that the binder resin can be a polyester resin having preferably an acid value of at most 50 mg KOH/g.

Col. 10, lines 26-28. The upper limit, 50 mg KOH/g, of the Tanikawa acid value range of "at most 50 mg KOH/g" is within the acid value range recited in instant claims 8 and 10. The Tanikawa acid value range of "at most 50 mg KOH/g" also overlaps the acid value range recited in instant claims 8 and 10. The Tanikawa binder resin meets the compositional limitations of the binder resin recited in instant claims 8 and 10. Tanikawa teaches that the colorant can be an appropriate pigment or dye or can be a magnetic material. Col. 16, lines 44-47; and col. 16, line 64, to col. 17, line 2. According to Tanikawa, its toner has sufficient anti-offset properties and has excellent fixing properties. Col. 3, lines 35-43; col. 20, lines 55-59; and Table 3 at col. 23, example 2.

Tanikawa does not exemplify a toner comprising the monoazo compound recited in instant claims 7 and 9. However, Tanikawa teaches that the charge controlling agent can be a metal-containing complex dye, especially a 2:1 type metal-containing

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complex salt dye (dye molecule/metal = 2/1) as shown in formula (I) disclosed at col. 12, lines 30-48.

C.I. Acid Black 58 is a well-known 2:1 chromium monoazo complex dye. See the ACS RN 12218-94-9. C.I. Acid Black 58 is a commercially available product. C.I. Acid Black 58 is also known under the tradename Irgalan Grey BL manufactured by Ciba Geigy Corp. See the ACS RN 12218-94-9 and Lazar at col. 3, lines 14-17. C.I. Acid Black 58 meets the azo metal complex charge controlling agent disclosed by Tanikawa. C.I. Acid Black 58 also meets the compositional limitations of formulas (I) and (II) recited in instant claim 7 and 9, respectively. C.I. Acid Black 58 comprises a monoazo moiety that comprises a phenyl group substituted with a mesyl group and a naphthyl group substituted with the group $\text{-NHCO-OCH}_2\text{CH}_3$, which is within the compositional limitations of the group -NHCO-O-R^6 when R^6 is an alkyl group having 1 to 18 carbon atoms as recited in instant claims 7 and 9.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Tanikawa and Lazar, to use the commercially available dye C.I. Acid Black 58 as the charge controlling agent in the toner disclosed by Tanikawa. That person would have had a reasonable expectation

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of successfully obtaining a toner having the properties taught by Tanikawa.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Mr. Nam Nguyen, can be reached on (571) 272-1342. The central fax phone number is (571) 273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD
Mar. 9, 2006

Janis L. Dote
JANIS L. DOTE
PRIMARY EXAMINER
GROUP 1500-
1700